

# PHENIX WEEKLY PLANNING



9/17/2009

Don Lynch

Start of shutdown tasks

Erected scaffolds in stations 1, 2 and 3 of MMS

Tools for RPC Factory: tilt table and burn in test stand

Designed and fabricated RPC installation components, fixtures

Procedures and work permits

Designed, fabricated and assembled PC1 repair fixture

Installed station 1 MuTrigger FEE upgrades

Repaired faulty DC FEMs

Removed HBD East for repairs

Massive prep for installation of RPC3 North

- work platforms and acces above MuID north
- cleared and organized gap 5 north
- test pours for gap 5 grouting
- test lifts for base and half octants
- presurvey of all half octants
- survey of wall mount positions for installation of half octants
- new lighting for RPC3 N tunnel area
- removal of shielding, vapor barrier and crystal palace
- rack prep
- lift fixture approval tests
- gap 5 sealing and end dams - ready for installation and grouting

Replaced failed PC1 module and associated PC1 repairs

## Remaining RPC3 North Tasks

- Disassemble west base at Factory and move to west trough in tunnel
- Stencil/permanent mark RPC3 lifting fixtures
- Design rotating ram lift
- Order parts for rotating ram lift
- Remove prototype absorber
- Preassemble east base in IR, disassemble and reassemble in east trough
- Install exhaust system
- Dam and seal gap 5 for grouting
- Compare measurements of 1st octant from factory test fit to surveyed tunnel measurements
- Prep meeting for riggers
- Move MuID gas rack from Gap 5
- Make rotating fixture from unistrut
- Drill & tap MuID steel 5 holes
- Install pedestal track and 6 wall tracks (pitch control)
- Report mat certs on pins to Kane
- Install and position west and east bases
- Survey bases
- Grout bases
- Install unistrut vertical rails on east and west bases
- Install 1st half octant, attach to pedestal rail
- Install 15 more  $\frac{1}{2}$  octants
- Install gas system and distribution
- Install angle supports on top of MuID steel 5
- Restore gap 5 piping and wiring
- Install 2 Racks in west trough
- Install rack components and wire up  $\frac{1}{2}$  - octants
- Install new vapor barrier
- Install heaters and thermostats
- Re-Install shielding
- Final wiring and commissioning

# This Week 9/14-9/18

TECHNICAL SUPPORT NOON

Task	Start Date	End Date
Move DC on EC to access PC1 east	Done	Done
Disassemble DC/PC1 cables & piping	Done	Done
Install Station 1 MuTrigger FEE air & water and test	Done	Done
Simulated RPC installation at RPC Factory (practice/tests) test all installation parts: base, locking/install, survey, cradle	Done	Done
Test and commission RPC3N lifting fixtures at factory	Done	Done
Remove failed PC1 east module	Done	Done
Install spare PC1 east module	Done	Done
First $\frac{1}{2}$ octant ready for installation	Ready	Ready
Move MuID plumbing rack on pedestal away From gap 5	In Progress	9/18
Drill and tap MuID gap 5 steel top and north	In Progress	9/18
Install MuTrigger FEE station 2/3 air & water plumbing and test	In Progress	10/9
Remove RPC prototype absorber and support structure	9/15	9/18
Analyze and test EC dumbwaiter	In Progress	9/18
Move DC on EC back to normal position	9/18	9/18
Install MuTrigger FEE station 2/3 FEE's & Electronics & connect cables	In Progress	9/25
Install MuTrigger FEE station 2/3 FEE's & Electronics & connect cables	In Progress	9/25
Prep RPC3 N racks for installation	In Progress	9/30
MuTr decapacitations & MuTr FEE trouble-Shooting in MMS Sta 1&3	In Progress	10/15

9/17/2009



PC1 East Repair  
Repair Completed



## Next Week 9/21-9/25

## Task

Start Date End Date

TECHNICAL SUPPORT ROOM

Install, align, survey &amp; grout RPC3N east and west base support assemblies

9/21

9/25

Remove station 1 south scaffolding (may be delayed)

9/21

9/25

Reconnect cables and piping on DC and PC1 East

9/21

9/25

Final verification tests on PC1 east repair

9/28

9/30

Prep RPC3 N racks for installation

In Progress

9/30

Install new gap5 N cable &amp; pipe supports, cables and piping and leak test piping

In progress

9/30

Install MuTrigger FEE station 2/3 air &amp; water plumbing and test

9/14

10/9

MuTr decapacitations &amp; MuTr FEE trouble-Shooting in MMS Sta 1&amp;3

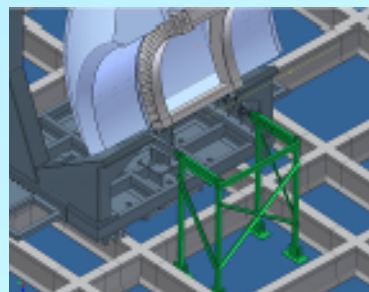
In Progress

10/15

MuTr HV and FEE test and evaluation as MuTrigger FEE's &amp; RPC's are installed

In progress

11/30



9/17/2009

## Power Shut Down Notice- Substation 4D, 6C, STAR MMPS and 8B

Starting Date: September 23, 2009. Wednesday

Starting Time: 900

End Date: September 24, 2009. Thursday

End time: 1600

Affected areas: Building 1004 RHIC RF power supplies, 1006 STAR MMPS, STAR Cooling water and 80T chiller, **PHENIX MMPS and cooling waters.**

Purpose: 1. Inspect 13.8 kV overhead lines, air switch line up and repair damaged insulators.  
2. Inspect substation 4D and 6C 480V power circuit breakers.  
3. Inspect 1006 STAR cooling system motor control center.

No diesel generators are affected. No cryogenics systems are affected.

Please contact P.K. Feng X 5648 for questions.

## Tasks with slipped starting dates

Task	Start Date	End Date
Plan and install 2 new PHENIX gas pad expansion pads	In progress	9/30
Vendor install Ar dewar & vaporizer	In progress	9/30
Install rails and fences on gas pad	In progress	9/30
Install RPC3 N support base & grout	In progress	9/18
Install Station 3 N pitch control (unistrut rails) on pedestal and east and west gap 5 north walls and attach to support bases (tall column)	In progress	9/18
Install RPC3 N $\frac{1}{2}$ Octants (16 days)	9/21	10/30





# Continuing Tasks currently underway (elec.)

TECHNICAL SUPPORT 2009

Task	Start Date	End Date
Add single-button ON/OFF controls to some LV GUIs	7/20	12/1
Determine optimal baud rate for EC North RMC	7/20	12/1
Remove the temporary FlatPAC in SMT4 and install two new MegaPACs	7/20	12/1
Install LV Dist modules in MuTrigger S.	7/20	12/1
Remove temporary MegaPAC in sRPC1 rack and install new full MegaPAC and finish controls for it	7/20	12/1
VTX/FVTX LV Dist system evaluation	7/20	12/1
Prep for production of up to 39 boards in 4 crates (VTX/FVTX)	7/20	12/1
VTX/FVTX cooling system interlock design	7/20	12/1
Evaluate possible design for 4x1 GL1 L1 triggers	7/20	12/1
Test direct ethernet implementaion on Maszi's new HV control interface board	7/20	12/1
DCM rack electric prep	8/3	10/30
Rack room re-organization	9/1	11/30
CM Power Upgrade	9/1	11/30

## More Continuing Tasks currently underway (elec., cont'd.)

Task	Start Date	End Date
AH Crane 110 switch for lockout	9/14	10/31
Design supports for Beampipe upgrade	7/6	11/30
Fan Tray replacements (as time permits)	7/8	11/30
DCM rack supply & Return plumbing	10/5	10/16
DCM rack internal plumbing	10/19	10/30
Design support for FOCaI	7/6	11/30
Design support for FVTX	7/6	11/30
Design & Fabrication support for VTX	7/6	11/30
Test/replace rack transient suppression	7/20	12/1
UPS feeds for GTM and GL1 racks	7/20	12/1
Cordless phones in tunnel	7/20	12/1
Individual relays on all HV supplies	7/20	12/1
SF6 alarm to MCR?	7/20	12/1
More volts to EMCAL FEM's?	7/20	12/1
Revisit LV systemization/standardization of controls, etc.	7/20	12/1
Correct wiring of the DCM crates enables	7/20	12/1
Replace ECB1&2 (ADAM5000s) with a single new ADAM5000E	7/20	12/1
Replacement OPC server computers	7/20	12/1
Replace old PCI type RS485 interface boards with USB-Fiber and Fiber-RS485 system	7/20	12/1



# Continuing Tasks currently underway (gas)

## Task

Start Date End Date



TECHNICAL SUPPORT	Get AC's installed in mixing house	7/20	12/1
	Investigate shed/larger bottles for R134A	7/20	12/1
	Replace damaged compressed air flowmeter	7/20	12/1
	Add check valves to some supply lines (as needed)	7/20	12/1
	Design and build heat exchanger for HBD system	7/20	12/1
	Replace/ regenerate HBD purifier and driers (late Fall)	7/20	12/1
	Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)	7/20	12/1
	Replace pad chamber flowmeters in IR, re-label	7/20	12/1
	Investigate Mutr station 2 gas loss. Confirm labeling	7/20	12/1
	Replace/upgrade gas house PC's	7/20	12/1
	Re-route several gas lines in the RPC3 south gap	7/20	12/1
	Run gas lines to North tunnel	7/20	12/1
	Design and build gas humidifier	7/20	12/1
	Layout and build North distribution panel	7/20	12/1
	Run Signal/control lines to north tunnel (line goes to IR panel first)	7/20	12/1
	Build RPC gas rack for mixing house	7/20	12/1
	Install electronic and Gas PC in gas house	7/20	12/1

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PHENIX

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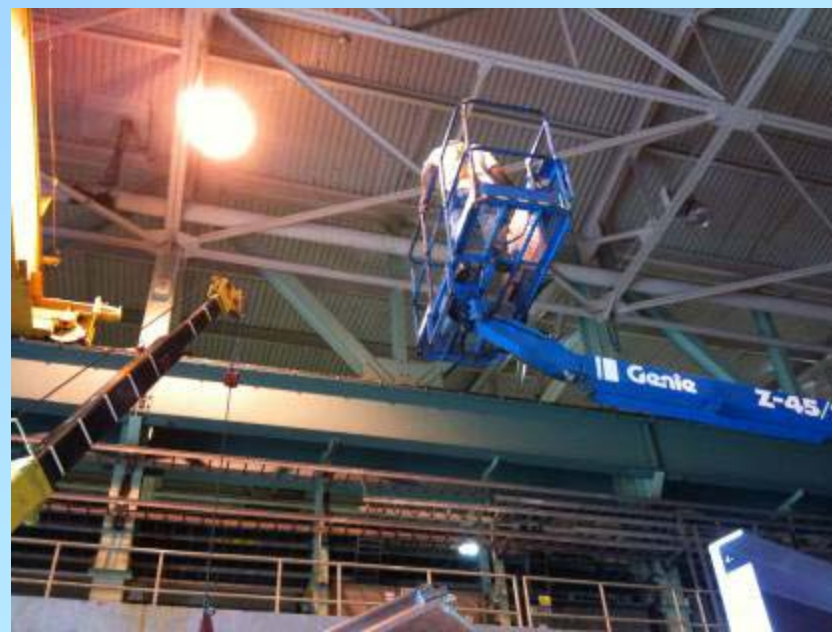


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17

# MuTRG installation status

Sep. 17, 2009

PHENIX Planning Meeting

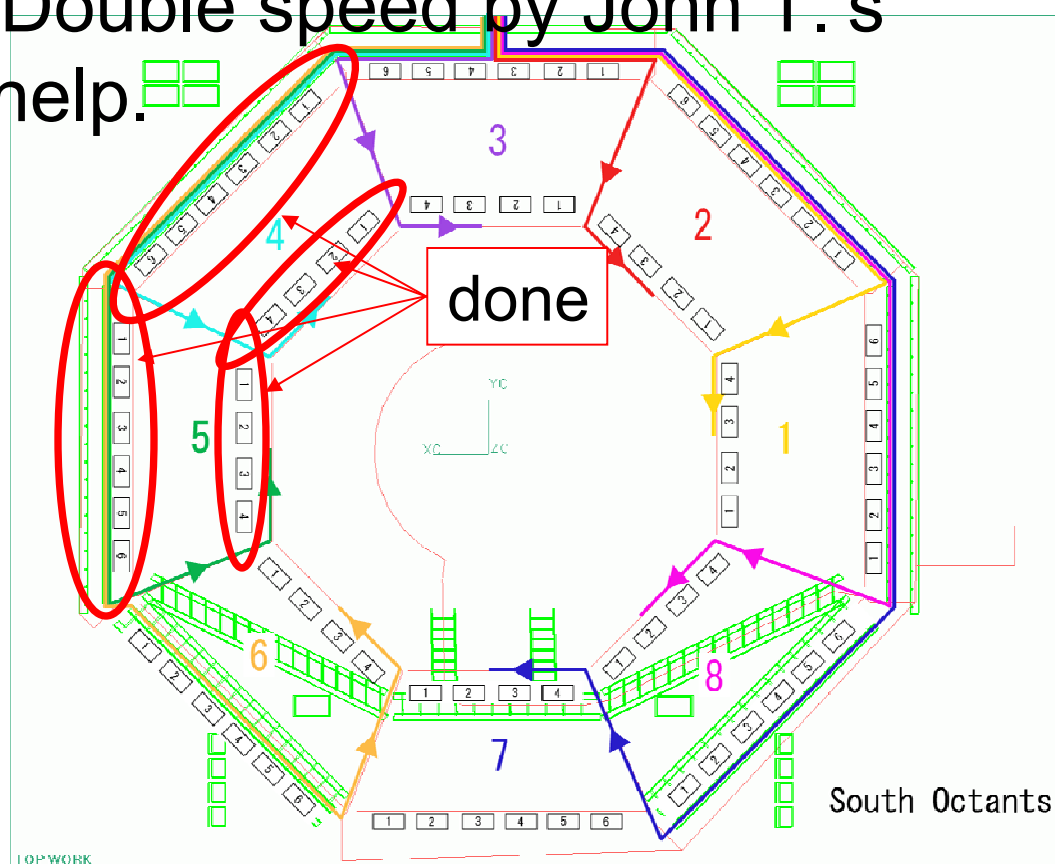
Itaru Nakagawa / Yoshi Fukao



# Plumbing

- Station-1 Completed.
- Station-2&3 in progress
- 1 octant/day by Mike Lenz

Double speed by John T.'s help.  





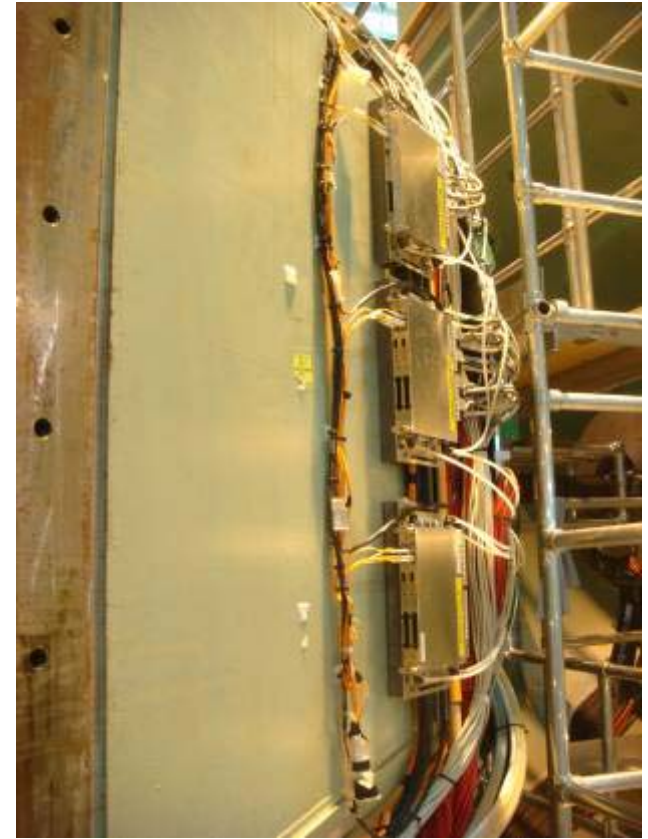
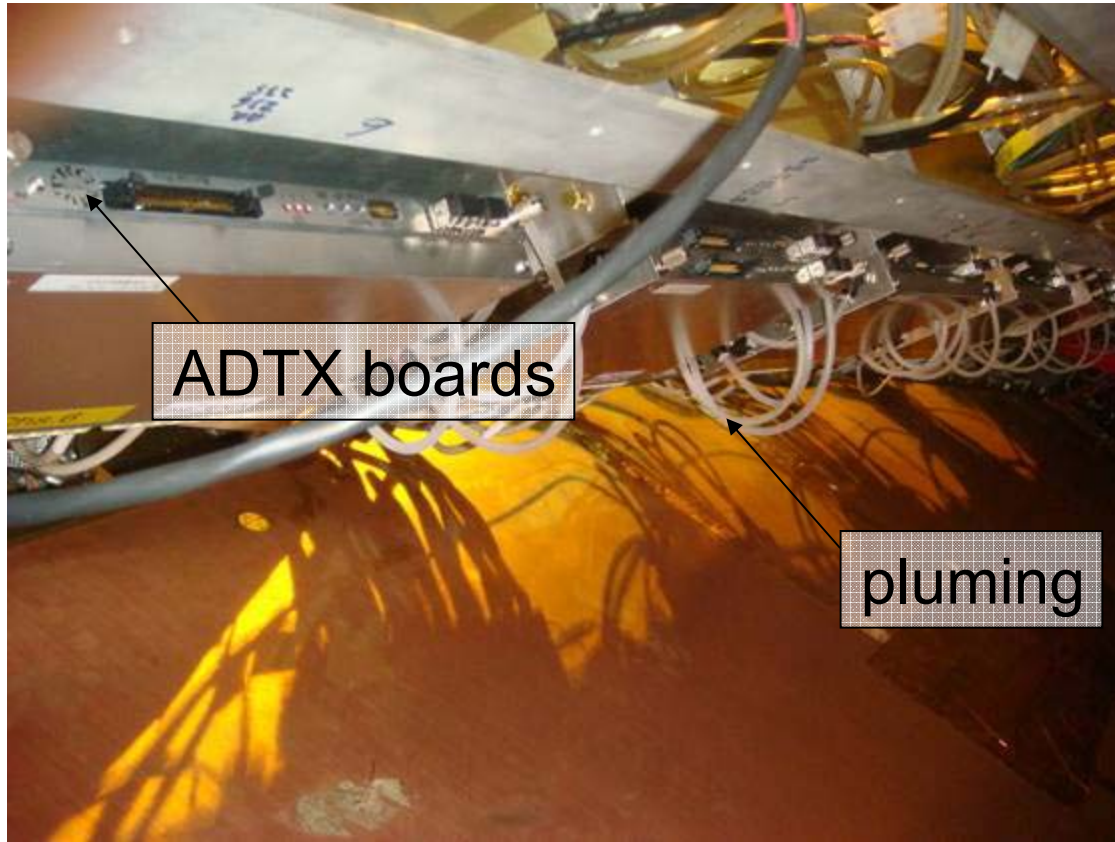
# Board QA



- Board QA is completed.  
(Junichi)

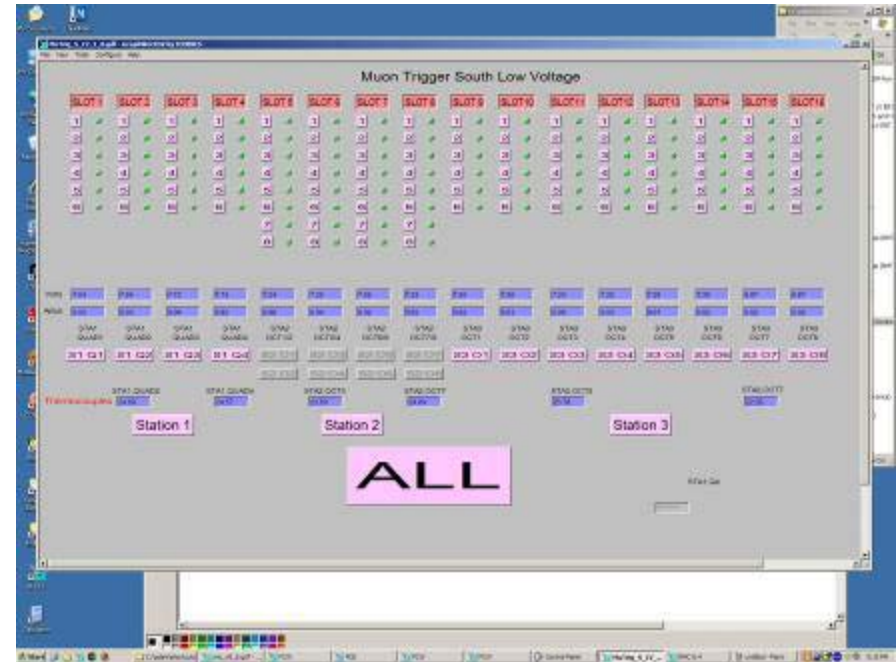
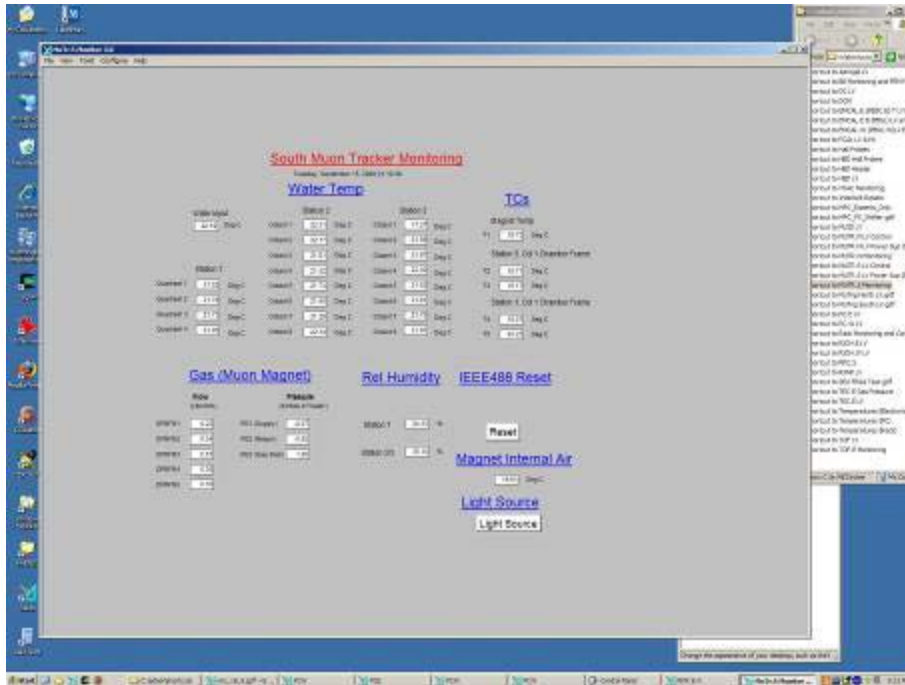


# ADTX Board installation



- All ADTX boards are in. (Jimmy, Chris)
- Fiber/LV cable connections are completed (St-1), will be completed today. (St-2&3)

# South Thermocouple Readouts

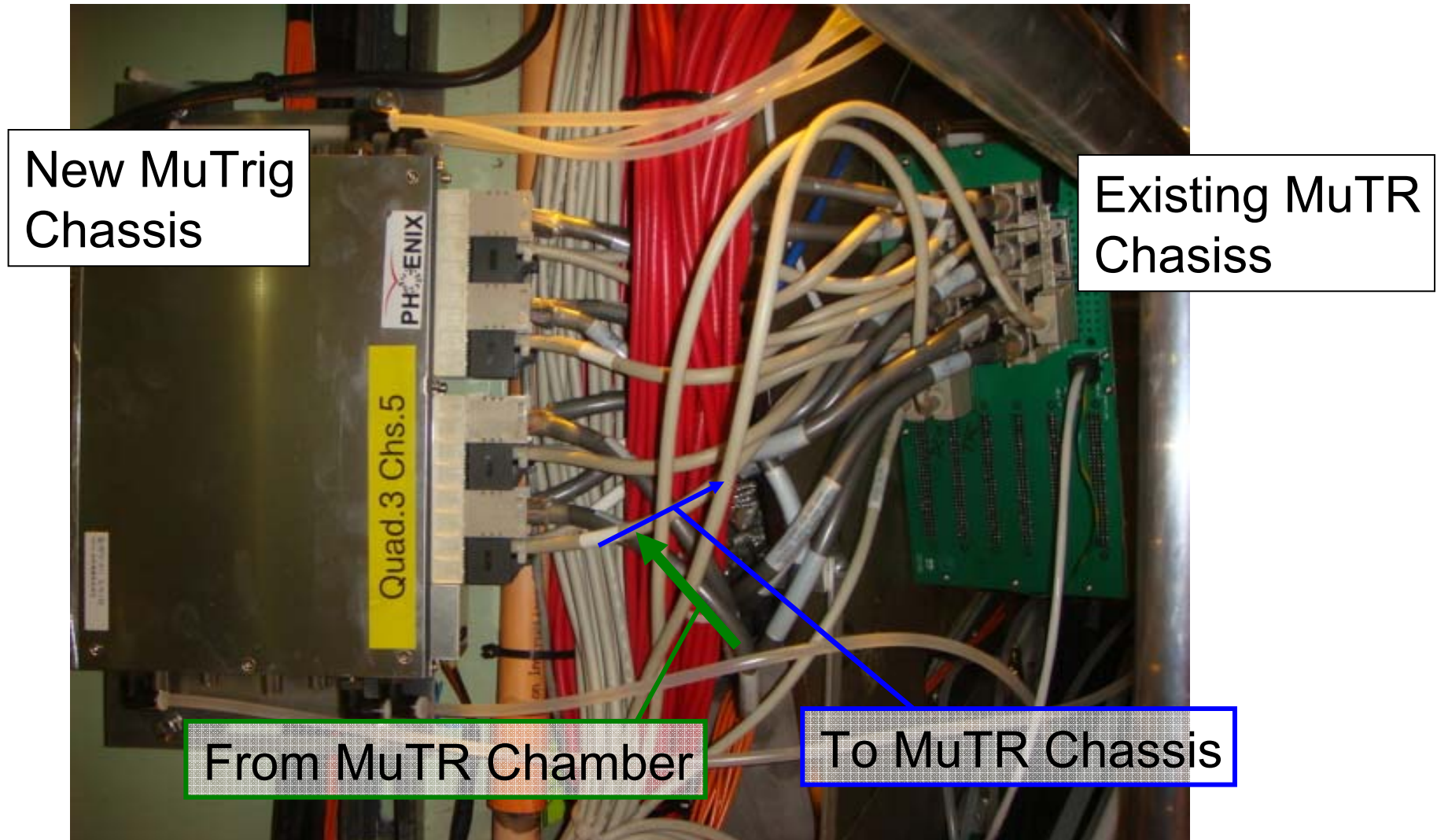


- Cable running (Jimmy, Yoshi)
- Completed wiring in LV rack (Frank)
- Readout GUI (Steve)
- Add readouts to OPC page -> John H.
- Sensors to be installed on ADTX boards (MuTrig Group)

Completed

To be done

# New Cathode Cable Installation



1 octant/day → 2 dedicated weeks to complete

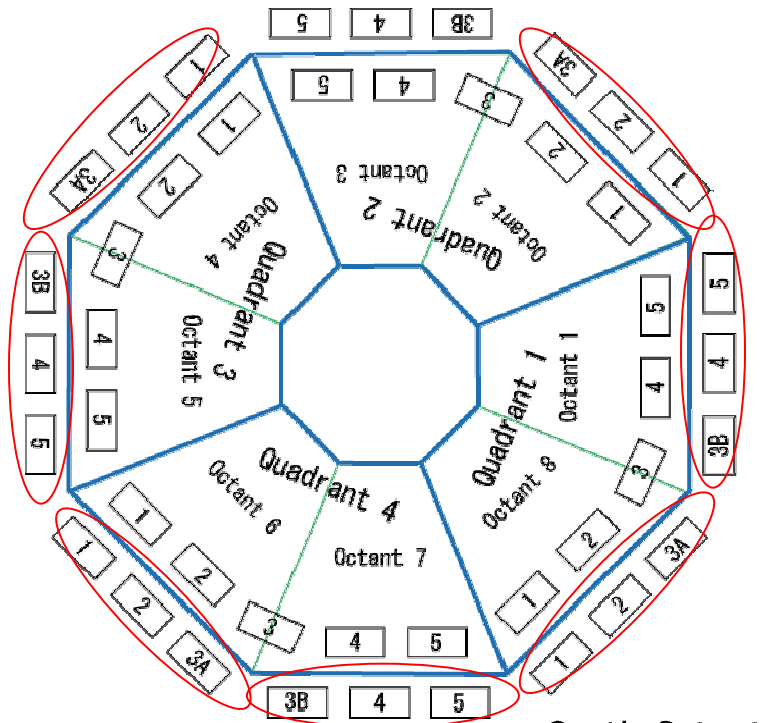


# ADTX-FEE cable install



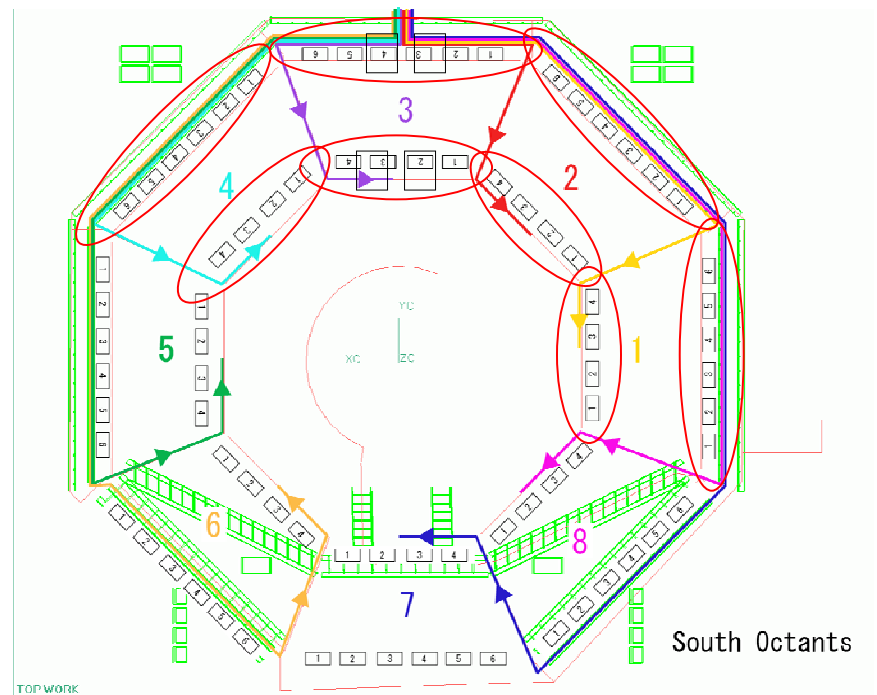
# ADTX-FEE cable Install (2)

 Completed



Station-1

South Octants



Station-2&3

- Station-1 nearly completed. Oct-3 high noise under investigation (Yoshi)
- St-2&3 are in progress

1 octant/day → 2 dedicated weeks to complete

# Plan for next week

- ADTX fiber/LV connection (will finish today)  
(Jimmy)
- Plumbing (Mike, John)
- Cathode Cable Installation (MuTRG group)
- Data taking with radioactive source. (Carter)  
MuTr HV need to be turned on.



## Expected IR Configuration During Shutdown '09

- Now-10/1 MMS south, CM in run position, EC in AH  
WC in west position (against wall), scaffolding  
in station 1 and station 2/3 south
- 9/25-11/10 MMS, CM & WC positions TBD, EC in AH
- 11/10-12/1 MMS & CM in run position, EC and WC can be  
moved east west ~3 ft

These dates are approximate and subject to change

## October Schedule

## Task

Start Date

End Date

TECHNICAL SUPPORT 2009

RPC3 North Installation of 16  $\frac{1}{2}$ -Octants

In Progress

10/31

Troubleshoot MUTr decaps in MMN

In Progress

10/15

Troubleshoot MUTrigger FEE's in MMN

In Progress

10/15

Final leak test new Ar dewar/vaporizer and Closeout

10/1

10/4

Close MMN Hatch and closeout WP

10/1

10/15

Install Empties racks on gas pad

10/1

10/4

Disassemble and store PC1 east repair fixture

10/1

10/2

Install 2 RPC3 N racks

10/1

10/30

Install rack components in RPC3 N racks

10/1

10/31

Attach cables to RPC3 N racks and to Detector  $\frac{1}{2}$  octants

10/1

10/30

Install new PHENIX north tunnel thermal/vapor barrier replacing crystal palace

10/1

10/30

Remove MMS Sta 2/3 scaffolding

10/12

10/23

Commission RPC3 N racks and detectors

10/12

10/30

Reinstall MMS lampshades

10/26

10/30

## November Schedule

## Task

Start Date End Date

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- Install heaters and thermostat(s) for RPC3N thermal control 11/2 11/6
- Reinstall PHENIX North tunnel shielding (3 days) 11/2 11/6
- Cooldown for Run 10 Starts 11/7 11/7
- Move MuID Collars to IR 11/7 11/7
- Disconnect electric & Fiber in EC 11/2 11/7
- Remove ladder & dumb waiter from EC & Fold up EC platforms in AH (1 day) 11/9 11/10
- Veterans Day Holiday - no work 11/11 11/11
- Remove IR Floor plates and move 12 ton cart to AH 11/12 11/12
- Move EC to IR 11/12 11/13
- Replace EC water hoses below EC 11/14 11/20
- Reconnect electric and fiber to EC 11/16 11/20
- Reinstall ladder & dumb waiter on EC & Fold down EC platforms in IR (1 day) 11/16 11/20
- Pink sheets, white sheets, blue sheets 11/16 12/1
- Move MMS north, Install MuID Collars 11/23 11/25
- Assemble shield wall base and wall in AH 11/23 11/30
- Thanksgiving Holiday - no work 11/26 11/27
- Roll in shield wall 11/30 11/30
- Start Run 10, All shutdown activities completed 12/1 12/1



## DC East Repair Proposal

The DC has several broken wire inside that short quite a large number of good wires and reduce available acceptance of the detector. Usually wires are removed right before the run since new broken wires can appear at any time, most often it happens when electronics is put in 24/7 operation. However, several wires broken on the very top of the DCE are not reachable from the CM lift table or otherwise when EC is in IR.

The repair itself is going to be a standard procedure that involves: 1) light cleaning and cutting of window; 2) removal of broken wires; 3) sealing of the chamber.

To perform the repair a few things are needed:

- 1) Operational DC-PC1 HV system to check the current state of the detector and try to locate broken wires before opening the detector.
- 2) Some support to have an access to the very top of the DCE. One of the possibilities is a man lift (all necessary exams must be taken). **Vertical scissor lift is being looked into (D. Phillips)**
- 3) Some support from the gas mixing house to check that the detector is sealed properly after the repair.
- 4) **Needs work permit (D. Lynch will create)**

All instruments which are required for the repair are at Stony Brook.

Repair must be performed before October, 25 when DC experts leave to return to Russia.

# 2009 Building Maintenance Issues

TECHNICAL SUPPORT NO. 9

- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall.: Roof Repairs Done ??
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- Improved Rack Room AC performance: New AC on order
- General maintenance for Trailer Offices and Gas Mixing House stairs, ramps and siding, gutters, etc. (cleaning and repairing worn/rotted wood): Carter has placed work orders
- Icy conditions at mixing house north stairs: Need new Mixing House Gutter
- Purchase and install 2 AC's in Phenix Gas Mixing House  
Suggested model : McMaster part number: 1817K89 (19.5 K btu)



# Safety, Security, etc.

1. Scaffold Inspector training being given at BNL by Steve Kane  
9/21 & 9/24
2. DOE Safeguards and security audit This Week (done yet?)
  - Wear your badge at all times
  - Secure valuables when not in use
  - Secure sensitive information
  - Obey signs barricades, etc.
  - Report suspicious activity to police (x2222 or 911)
  - Report cyber security problems to response team at x8484
3. New LOTO training: all LOTO Authorized Workers required to take LOTO2009 (web read and acknowledge, takes about 3 minutes, no test)
4. Remember that all persons working on jobs covered by work permits must read and sign the permit (back side of green cover page, if more space needed, just add a lined sheet after green permit for additional names.). For confined space you must also sign the entry log.
5. Recall on 33X series Fluke digital clamp on meters and Fluke T2 testers with s/n higher than 7351XXXX If you have one of these meters:
  - Stop using even if no sign of defect
  - visit following website for free replacement

<http://us.fluke.com/usen/Support/Safety/33X-Recall.htm>



# Where To Find PHENIX Engineering Info



*Kubota man*

Last weekend of the summer.

Enjoy

The Fall starts Monday.

Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

